

**REMARKS**

**Summary of the Office Action**

Claims 10-12 and 17-23 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over Takao et al. (US 4,917,471).

Claims 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takao et al.

**Summary of the Response to the Office Action**

Applicants amend claim 10 to further define the invention. Accordingly, claims 10-23 are pending for further consideration.

**All Claims Define Allowable Subject Matter**

Claims 10-12 and 17-23 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over Takao et al. (US 4,917,471), and claims 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takao et al. Applicants respectfully traverse these rejections as being based upon a reference that neither teaches nor suggests the novel combination of features recited in amended independent claim 10, and hence dependent claims 11-23.

Independent claim 10, as amended, recites a method for manufacturing a liquid crystal display including, in part, “the total thickness of the first orientation film and the second orientation film of each pixel corresponding to each color is formed differently from one another.” In direct contrast to Applicants’ claimed invention, the Office Action alleges that the alignment control film 17 in FIG. 2 of Takao et al. is the “second orientation film,” as recited by amended independent claim 10. In addition, the Office Action alleges that, in FIG. 2 of Takao et al., “the total thickness of the orientation film of each pixel corresponding to each color is

formed differently from one another (Fig. 2, ref. 17).” Applicants respectfully disagree.

First, Applicants respectfully assert that Takao et al. apparently shows, in FIG. 2, that the alignment control film 17 is formed to have the same thicknesses overlying and corresponding to each of the color filter regions R, G, and B. In addition, Applicants respectfully assert that Takao et al. fails to explicitly recite anything with regard to the relative thicknesses or dimensions of the different portions of the alignment control film 17 overlying and corresponding to each of the color filter regions R, G, and B.

MPEP 2125 instructs that “[w]hen the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See *Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000).” Accordingly, since Takao et al. does not disclose that the features shown in FIG. 2 are “to scale,” and Takao et al. is completely silent as to the dimensions of the features shown in FIG. 2, then any allegation set forth by the Office Action regarding relative thicknesses of the portions the different portions of the alignment control film 17 overlying and corresponding to each of the color filter regions R, G, and B based upon FIG. 2 is of “little value.” Thus, Applicants respectfully assert that Takao et al. fails to teach or suggest that “the total thickness of the first orientation film and the second orientation film of each pixel corresponding to each color is formed differently from one another,” as recited by amended independent claim 10.

Moreover, Applicants respectfully submit that the features alleged by the Examiner to be shown in FIG. 2 of Takao et al. simply do not exist. For example, the portions of the alignment control film 17 overlying the red, green, and blue color filter units (R, G, and B) are not shown to

have different thicknesses, nor does Takao et al. implicitly or explicitly disclose that the alignment control film 17 has different thicknesses overlying the red, green, and blue color filter units (R, G, and B). Accordingly, Applicants respectfully submit that Takao et al. fails to teach or suggest every feature recited by amended independent claim 10, and hence dependent claims 11-23. Thus, the rejection of claims 10-12 and 17-23 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over Takao et al. must be withdrawn.

With regard to claims 13-16, the Office Action correctly admits that Takao et al. fails to disclose the steps recited by claim 13. Accordingly, the Office Action apparently relies upon reasoning that using photolithography techniques are “well known.” Thus, the Office Action concludes that it would have been obvious “for the region of the orientation layer corresponding to the first or the first and the first and the second region to be opened, and etching an exposed portion of the orientation film only since utilizing photolithography techniques in order to fabricate precise dimensions of liquid crystal layers is well known in the art.” Applicants respectfully disagree.

First, Applicants respectfully assert that although “utilizing photolithography techniques in order to fabricate precise dimensions” may be well known, the Office Action fails to establish that the recited steps of claim 13 are well known. Specifically, the Office Action fails to establish a prima facie case of obviousness that “forming photo resist pattern where the region of the orientation film corresponding to the first color is opened, and etching an exposed portion of the orientation film only,” as recited by claim 13, is well known.

Applicants respectfully assert that the Office Action's alleged motivation to modify Takao et al. (i.e., to fabricate precise dimensions of liquid crystal layers) is neither taught nor suggested anywhere in Takao et al. with respect to "forming photo resist pattern where the region of the orientation film corresponding to the first color is opened, and etching an exposed portion of the orientation film only," as recited by claim 13. Moreover, Applicants respectfully assert that Takao et al. actually teaches (col. 11, lines 55-68):

The material for the alignment control film to be used in the present invention may be selected from, for example, resins such as polyvinyl alcohol, polyimide, polyamideimide, polyester, polycarbonate, polyvinyl acetal, polyvinyl chloride, polyvinyl acetate, polyamide, polystyrene, cellulose resin, melamine resin, urea resin, acrylic resin, etc., or photosensitive polyimide, photosensitive polyamide, cyclic rubber type photoresist, phenol novolac type photoresist or electron beam photoresist (polymethyl methacrylate, epoxidized 1,4-polybutadiene, etc.) and so on. The thickness of the alignment control film 7 is set generally in the range of 10 .ANG. to 1 .mu.m, preferably 100 .ANG. to 3000 .ANG., depending on the film thickness of the ferroelectric liquid crystal.

Accordingly, Applicants respectfully assert that the passage of Takao et al. cited by the Office Action, and reproduced in its entirety above, is directed toward material selection for the alignment control film and has nothing to do whatsoever with disclosing "the step of forming a photo resist pattern (col. 11, lines 63-65)," as alleged by the Office Action. Thus, Applicants respectfully assert that the Office Action fails to establish a *prima facie* case of obviousness with regard to at least claims 13-16.

Second, Applicants respectfully assert that the Office Action fails to provide any "well known" motivation with which to modify Takao et al. in order to provide for the step of "forming photo resist pattern where the region of the orientation film corresponding to the first

color is opened, and etching an exposed portion of the orientation film only,” as recited by claim

13. Moreover, Applicants respectfully assert that the Office Action fails to establish a *prima facie* case of obviousness with regard to at least claims 13-16 by any implied “Official Notice” reasoning in order to remedy the admitted deficiencies of Takao et al.

As instructed in MPEP 2144.03A, “[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known,” and, in part, “[i]t is never appropriate to rely solely on ‘common knowledge’ in the art without evidentiary support in the record, as the principle evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697.” Accordingly, Applicants respectfully submit that since none of the prior art of record teaches or suggests that “forming photo resist pattern where the region of the orientation film corresponding to the first color is opened, and etching an exposed portion of the orientation film only,” as recited by claim 13, is well known and capable of instant and unquestionable demonstration as being well-known to fabricate precise dimensions of liquid crystal layers, then it is not appropriate for the Examiner to take official notice or make the assertion that such steps are well known.

Furthermore, as instructed by MPEP 2144.03C, “[i]f applicant adequately traverses the examiner’s assertion of official notice, the examiner must provide documentary evidence in the next Office Action if the rejection is maintained. See 37 CFR 1.104(c)(2). See also *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697.” Thus, Applicants respectfully submit that if the rejection is maintained, documentary evidence be provided in the next Office Action that it is well-known for “forming photo resist pattern where the region of the orientation film corresponding to the

first color is opened, and etching an exposed portion of the orientation film only,” as recited by at least claim 13.

Moreover, “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).” See MPEP 2143.01. Thus, Applicants respectfully submit that since Takao et al. fails to teach or suggest forming photo resist pattern where the region of the orientation film corresponding to the first color is opened, and etching an exposed portion of the orientation film only, then Takao et al. fails to provide motivation with which to arrive at Applicants’ presently claimed invention.

Third, Applicants respectfully assert that the allegation of “utilizing photolithography techniques in order to fabricate precise dimensions of liquid crystal layers is well known in the art” is completely inapposite to the steps recited by at least claim 13. Specifically, Applicants respectfully assert that claim 13 recites, in part, that the step of varying the total thickness of the orientation film of each pixel corresponding to each color further comprises “the steps of forming photo resist pattern where the region of the orientation film corresponding to the first color is opened, and etching an exposed portion of the orientation film only,” and that “precise dimensions of liquid crystal layers,” as cited by the Office Action, is completely irrelevant to the orientation film. In other words, the alleged motivation for “utilizing photolithography techniques in order to fabricate precise dimensions of liquid crystal layers is well known in the art” has nothing to do with the fabrication of the orientation layer. Specifically, “liquid crystal layers” are neither synonymous nor equivalent to the orientation layer, as recited by at least claim 13.

For at least the above reason, Applicants respectfully assert that the Office Action fails to establish a *prima facie* case of obviousness with regard to at least claims 13-16. Thus, Applicants respectfully assert that the rejection of claims 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takao et al. must be withdrawn.

For the above reasons, Applicants respectfully assert that the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be withdrawn because the applied art does not teach or suggest the novel combination of features recited in amended independent claim 10, and hence dependent claims 11-23.

### **CONCLUSION**


In view of the foregoing, Applicants respectfully request entry of the amendments, reconsideration and the timely allowance of all pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under

37 C.F.R. § 1.136 not accounted for above, such as an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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